

DESCRIPTIONS OF THIRTY-ONE GASTROPODA AND ONE  
SCAPHIPOD FROM THE PERSIAN GULF AND GULF OF  
OMAN, DREDGED BY MR. F. W. TOWNSEND, 1902-1904.

By J. COSMO MELVILL, M.A., F.L.S.

*Read 9th March, 1906.*

PLATES VII AND VIII.

THE abyssal forms of molluscan life obtained beyond the 100 fathom limit in the Gulf of Oman seem almost inexhaustible, but the following descriptions well-nigh complete the series received up to the date of writing these lines, excepting indeed so far as the Pelecypoda are concerned. All of these, however, have at last been worked out, and a catalogue is in course of compilation by myself and Mr. R. Standen, and this we hope to publish without much further delay—a delay, I might add, that has been, from various causes, hitherto inevitable.

Of the minute forms of Gastropoda in these seas, many are exceedingly rare and local, others abound in countless numbers. Another haul of the dredge from the prolific stations, lat.  $24^{\circ} 58' N.$ , long.  $56^{\circ} 54' E.$ , at 156 fathoms, would no doubt have brought to light some wonderful species that perhaps now we may never see. Fragments, indeed, exist in the shell-sand of several unknown forms, not, unfortunately, in a condition to be described. One such is, perhaps, of the family Solaridiæ, with flattened base, beautifully finely decussate surface, and curious deep and narrow umbilicus, but the upper whorls are entirely broken away. Two or three Pleurotomidæ are in similar unfortunate condition, and a few others besides, the families and genera of which can be but guessed at.

I am informed by Mr. Townsend that the bringing up of this shell-sand was mainly due to an absolute accident, the anchor of the s.s. "Patrick Stewart" having dragged during the night, and stirred up the bottom ooze to an unusual extent.

When the abyssal and benthal life is better known, I should not be surprised if it be found that the 'minutiora' eclipse the larger marine species numerically in the proportionate ratio of 3 : 1, or even in a still greater degree. They are just as beautiful as—indeed, as a rule, more delicately sculptured than—their better known congeners, and, taken as a whole, do not seem to vary from their types to anything like the same extent. When once, therefore, their 'facies' has been grasped, the task of discrimination and differentiation becomes easier than might be thought to be the case by those who have not yet studied them.

When not otherwise stated, the locality for the following will be the one just quoted above, viz., in the Gulf of Oman at 156 fathoms.

I must just add, as on many previous occasions, my great indebtedness to Mr. Edgar A. Smith, I.S.O., of the British Museum (Natural History), to Mr. E. R. Sykes, F.L.S., Mr. G. B. Sowerby, F.L.S., and Mr. R. Standen. Likewise to Messrs. B. R. Lucas, J. Wilfrid Jackson, and the Rev. Lewis Shackelford for having so carefully sorted much of the shell-sand.

*SCALARIA CANEPHORA*,<sup>1</sup> n.sp. Pl. VIII, Fig. 28.

*S. testa minuta, attenuata, gradato-fusiformi, alba, delicata, anfractibus 8, quorum 4 apicales ochracei, plus minus læves, cæteris ad suturas multum impressis, longitudinaliter arcte oblique lamellatis, interstitiis sub lente spiraliter striatulis, ultimo infra medium subangulato, apertura rotunda, peristomate continuo, supra extus angulato. Long. 4, lat. 1.5 mm.*

This rare little Wentletrap, occurring as it did with so many other new forms of its genus, combines certain points of both *S. goniophora* and *theleteria*, M. & S., being similar to the first-named in general form, though its smallness and greater attenuation of whorl at once distinguish it, while to the latter species (*theleteria*) it assimilates in its decussating sculpture, though this characteristic is much finer, proportionately, in our species.

*SCALARIA (CIRSOTREMA) BONA*, n.sp. Pl. VIII, Fig. 29.

*S. testa fusiformi, crassa, albocinerea, rudi, varicosa, anfractibus ad 8, apicali . . . , cæteris apud suturas impressis, arcte rudilamellatis, lamellis obliquis, incrassatis, interstitiis lævibus, ultimo anfractu versus basim spiraliter unicarinata, apertura rotunda, peristomate continuo, pererasso. Long. 14, lat. 6 mm.*

A boldly constructed species, of the same alliance as *S. diadema*, Sowb., but the character of the lamellæ is totally distinct, and the contour more fusiform.

*CROSSEIA ERYMA*,<sup>2</sup> n.sp. Pl. VII, Fig. 1.

*C. testa perminima, profunde sed anguste umbilicata, alba, nitida, fere rotunda, solidula, compacta, anfractibus 5, quorum 2 apicales vitrei, lævissimi, cæteris tumidulis, apud suturas impressis, undique arcissime et delicate spiraliter striatis, ultimo ventricosos-univaricosos, globulari, circa umbilicum concentricè crassicarinato, apertura rotunda, labro incrassato, fere continuo, albo, columella excavata. Long. 2, lat. 1.15 mm.*

A very small but elaborate little species, belonging to a genus which has, so far, had few exponents brought to light. The only species near this shell would seem to be *C. striata*, Boog Watson, from Cape York, N. Australia. The bordered umbilicus is the same in both species, but the spiral striæ appear fine and closer in *C. eryma*, and the base is not so produced.

<sup>1</sup> *κανηφόρος*, 'basket-bearing,' from the fine cancellations.

<sup>2</sup> *ἔρυμα*, 'a bulwark,' from the strong umbilical keel.

FOSSARUS (COUTHOUYIA) EUDMETUS,<sup>1</sup> n.sp. Pl. VII, Fig. 2.

F. (*Couthouyia*) testa minima, alba, delicata, vix perforata, ovata, anfractibus 5, quorum apicalis lævis, vitreus, cæteris ad suturas canaliculatis, undique spiraliter et uniformiter crassiliratis, interstitiis squarrose cancellatis et fenestratis, ultimo circa regionem umbilicarem incrassato, fortiter carinulato, apertura ovata, labro extus 6-8 crenulato, columella excavata, apud basim paullum callosa. Long. 2, lat. 1.5 mm.

A very small and delicate species, which I think has nearly, if not quite, attained full growth. It resembles *Couthouyia insignis*, Nevill, but the aperture is smaller and rounder proportionately, and there is hardly any umbilicar perforation, the sculpture being somewhat similar.

## DIALA TRILIRATA, n.sp. Pl. VII, Fig. 3.

D. testa minuta, pyramidata, lævi, nitida, perforata, anfractibus 8, quorum apicales 2 globosi, vitrei, cæteris apud suturas canaliculato-impressis, superne brunneo vel castaneo sparsim maculatis, maculis paucis squarrosulis, ultimo anfractu ad peripheriam acute carinato, carinulis vel liris tribus contiguis prædito, ad basim angulatim prolongato, apertura ovata, labro paullum effuso, columella recta. Long. 2, lat. 1.5 mm.

Characterized by its small size, diamond shape, the body-whorl acutely keeled at the periphery, thrice lirate in all. It is obscurely marked with distant squarish brown or chestnut blotches, just below the sutures, otherwise is smoothish and immaculate. *Diala* is sometimes considered as a genus on its own merits, sometimes as a mere appanage of *Litiopa*, Rang.

## CERITHIOPSIS MATHILDÆFORMIS, n.sp. Pl. VII, Fig. 4.

C. angustissime fusiformi, minuta, albida, vel hic illic brunneo-sparsa, rugosa, anfractibus 9-10, apice mamillato, parvo, lævi, cæteris multum apud suturas impressis, ventricosis, quatuor liris spiralibus rugosis accinetis, undique longitudinaliter obscure costulatis, juncturis costularum litarumque gemmatis, ultimo anfractu quinque liris prædito, apertura subrotunda, labro tenui, columella fere recta. Long. 3.15, lat 1 mm. (sp. max.).

A very minute, narrow, yet rugged species, with some resemblance to a *Mathilda* in miniature, hence the proposed specific name.

EULIMA NISONIDA,<sup>2</sup> n.sp. Pl. VII, Fig. 6.

E. testa fusiformi, subtrapeziformi, nitida, alba, polita, omnino lævissima, solida, anfractibus 12-13, quorum 2 apicales parvi, globulares, cæteris ad suturas paullulum impressis, fascia lactea interna infra, juxta suturas spiraliter solum videnda, ultimo anfractu apud peripheriam angulato, apertura ovata, labro extus paullum incrassato, columella recta apud basim producta. Long. 6, lat. 2 mm.

<sup>1</sup> εὐδημητος, 'well-fashioned.'

<sup>2</sup> *Nisonida*, from its likeness to a species of *Niso*, Risso.

Angled at the periphery of the body-whorl, this typical *Eulima* much resembles in form *Niso venosa*, Sowb., from the same region, the var. *pura* of this species occurring sparingly in the same shell-sand. But there is no umbilicar perforation present, and the affinity is merely superficial. Two or three examples have, so far, alone occurred. It is of the same alliance as *E. Shoplandi*, Melv., and *E. Gentilomiana*, Issel, but the peripheral angle gives distinctive characters.

*EULIMA RHÆBA*,<sup>1</sup> n.sp. Pl. VII, Fig. 7.

*E. testa parva, aciculata, ad medium leniter incurva, subpellucida, lacteo-vitrea, perlævi, delicata, anfractibus ad 10, quorum apicales 2-3 nitentes, vitrei, lævissimi, cæteris ad suturas parum impressis, arcis, condensatis, apertura anguste oblonga, labro tenui, simplice, columella obliqua. Long. 3, lat. .75 mm.*

One of the smallest of the genus, but not the least interesting, being allied to the European *E. Philippii*, Weink., also known as *distorta*, Phil. non DeFrance, and *incurva*, Renieri. I have closely compared it with this variable species. It occurred but sparingly in shell-sand, and its discovery is due to the energetic sifting of Mr. J. Wilfrid Jackson.

*MUMIOLA EPIBATHRA*,<sup>2</sup> n.sp. Pl. VII, Fig. 5.

*M. testa minuta, angusta, fusiformi, alba, rimata, delicata, anfractibus 6-7, quorum apicales vitrei, læves, paullum planati, cæteris fortiter gradatis, arcte sed indistincte longitudinaliter costulatis, spiralter arcissime striatis, apertura ovato-rotunda, labro paullum effuso, columella fere recta. Long. 3, lat. 1 mm.*

A puzzling form, occurring extremely rarely in shell-sand. I am not sure as to its proper location, but in several ways *Mumiola* seems best suited to it. The peculiarly flattened apex is curious; the mouth, too, is small, proportionately speaking.

*MUCRONALIA BIZONULA*, n.sp. Pl. VIII, Fig. 31.

*M. testa minuta, attenuata, fusiformi, lævissima, polita, tenui, subvitrea, anfractibus 8, quorum 4 mamillati, caudati, irregulares, vitrei, ochrotineti, cæteris ad suturas vix impressis, lævibus, spiralter zona brunnea cingulatis, ultimo bicingulato, peristomate tenui, ad suturam paullulum sinuato et effuso, ad basim producto, columella obliqua. Long. 3, lat. 1 mm.*

A very minute, attenuately fusiform species, the upper whorls spirally once rufous or brown-banded, bizoned on the body-whorl, after the fashion of certain *Liostracæ*. A very few specimens have, so far, been found. Indeed, the three *Mucronaliæ* that occur together in the dredging at 156 fathoms are all of decidedly rare occurrence.

<sup>1</sup> ῥαιβός, 'bent, incurved.'

<sup>2</sup> ἐπιβάθρα, 'a scaling ladder,' from the gradate whorls.

MUCRONALIA LEPIDA,<sup>1</sup> n.sp. Pl. VII, Fig. 8.

*M. testa parva, ovato-fusiformi, vitrea, delicata, lactea, polita, lævigata, anfractibus 8-9, quorum 3-4 apicales parvi, mamillati, apice ipso heterostropho, cæteris ad suturas vix impressis, rapide accrescentibus, anfractu ultimo tertiam totius longitudinis partem præbente, apertura ovata, labro paullum incrassato, columella crassa, simplice. Long. 3, lat. 1 mm.*

A neatly-formed *Mucronalia*, of thicker and more compact substance than its ally, *M. oxytenes*, Melv., from the same locality.

SYRNOLA APERANTA,<sup>2</sup> n.sp. Pl. VII, Fig. 9.

*S. testa attenuato-fusiformi, alba, nitida, polita, solidiuscula, anfractibus ad 10-11, quorum apicales 2 parvi, quam maxime heterostropho, vitreo-globulares, cæteris apud suturas multum canaliculato-impressis, et paullum gradatis, quatuor ultimis anfractibus rectis, uniformibus, ultimo paullum producto, apertura ovato-rotunda, labro haud effuso, ad basim producto, margine columellari recto, fortiter uniplicato. Long. 6, lat. 1.25 mm.*

This species might easily be confounded with *Eulimella carmanica*, M. & S., which occurs with it in equal plenty. It is, however, of a more gracefully attenuate contour, with aperture smaller proportionately. The columella, too, is strongly once-plicate, in the *Eulimella* it is simple.

SYRNOLA CLAVELLOSA,<sup>3</sup> n.sp. Pl. VII, Fig. 10.

*S. testa parva, alba, nitida, polita, angusto-fusiformi, solidula, anfractibus 9-10, quorum 2-3 apicales magnopere heterostropho, conspicui, bulboso-globulares, cæteris apud suturas canaliculato-impressis, lineis internis 4-5 spiraliter præditis, apertura ovata, labro paullum producto, margine columellari fortiter uniplicata. Long. 4.5, lat. 1 mm.*

A very narrowly fusiform species, the heterostropho apical whorls unusually swollen, globular, club-like, and conspicuous in proportion to the size of the shell. The internal spiral lines, showing opaquely through the surface, are four or five in number, broadest just below the sutures. Very faint spiral chestnut banding appears in some specimens. It is one of the smallest *Syrnole*, and not, I think, very comparable with other forms of the genus.

## TURBONILLA (PYRGOSTYLIS) DELIA, n.sp. Pl. VIII, Fig. 30.

*T. testa brevis fusiformi, minuta, albo-straminea, anfractibus 8, quorum 2 apicales globulosi, vitrei, sublæves, cæteris ad suturas multum impressis, tumidulis, arcte lævicostatis, interstitiis lævissimis, apertura ovali, peristomate subeffuso, continuo, columella obscure plicata. Long. 3, lat. 1 mm.*

*Hab.*—Persian Gulf, Bushire, 6-10 fathoms.

Conspicuous for its ventricose whorls, yellowish colour, and shortened spire.

<sup>1</sup> *Lepidus*, 'neat, pleasing.'

<sup>2</sup> ἀπέραντος, 'countless,' from its frequency.

<sup>3</sup> *Clavellosa*, dim. of *clavus*, 'a club,' from the form.

## TURBONILLA HERMIA, n.sp. Pl. VII, Fig. 11.

*T. testa compresso-fusiformi, alba, nitida, anfractibus 9-11, quorum 2 apicales omnino heterostrophi, globulares, vitrei, cæteris ad suturas impressis, lævibus, paullulum ventricosulis, undique longitudinaliter lævicostatis, costis arcatis, nitidis, numero ultimum apud anfractum circiter 18, interstitiis sub lente delicatissime spiraliter striatis, apertura ovata, labro tenui, fere recto, columella obscure uniplicata. Long. 4.5, lat. 1.25 mm., sp. maj.; long. 4, lat. 1 mm., sp. min.*

Hitherto confounded with *T. terebrina*, Melv., which, first discovered by Mr. Abercrombie at Bombay, has been found to occur in the Gulf of Oman also, this new species, one of the most distinct of the many affecting this region, may be recognized by its compressedly fusiform build and 9-11 whorls, the lower ones mostly somewhat pinched in towards the centre, causing a slightly sinuous contour. The fine spiral striations may serve to distinguish it at once from the perfectly smooth *T. terebrina*. The columella is very obscurely once plicate, showing a possible transition to, and link with, *Pyrgulina*. The study of the *Turbonillæ*, in these seas, as elsewhere, presents numberless difficulties, especially as regards the *basilica-sororia* section, which abound in every dredging, and vary to a considerable extent. The form of the heterostrophe apex may serve as an index to specific character, but it is most likely that the ♂ and ♀ present shell-modifications difficult—indeed, with our present state of knowledge almost impossible—to grasp.

## ODOSTOMIA (PYRGULINA) HERVIERIOIDES, n.sp. Pl. VII, Fig. 12.

*O. (Pyrgulina) testa angusta, minima, alba, cylindracea, nitida, anfractibus 6½, quorum 1½ apicales vitrei, heterostrophi, globulosi, cæteris fere rectis, apud suturas paullum impressis, undique longitudinaliter costulatis, costulis rectis, crassis, numero ad 16 ultimum apud anfractum, interstitiis lævibus, apertura ovata, peristomate continuo, extus fere recto, columella uniplicata. Long. 3, lat. 1 mm.*

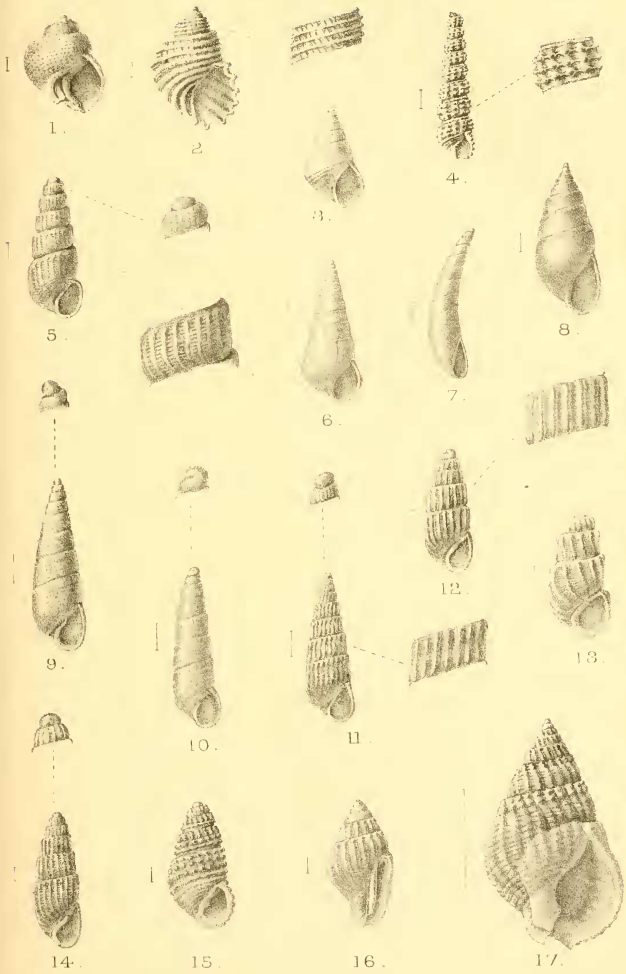
Minute, white, the straight longitudinal riblets being thick and large, proportionately speaking, with the interstices quite smooth. In miniature, much resembling superficially *Herviera isidella*,<sup>1</sup> M. & St., from the New Caledonian region, or *Elusa livida*, Sowb.,<sup>2</sup> from the Philippine Islands, which is, I consider, synonymous with *H. isidella*. Indeed, these may all some day be relegated to the same genus.

## ODOSTOMIA (PYRGULINA) TENERRIMA, n.sp. Pl. VII, Fig. 13.

*O. (Pyrgulina) testa minutissima, alba, fusiformi, delicata, anfractibus 4-5, quorum 1-2 apicales planato-globosi, vitrei, cæteris gradatulis, longitudinaliter costatis, costis prominulis, superne angulatis, interstitiis lævibus, apertura ovata labro fere recto, ad suturam angulato, columella paullum excavata, obscure uniplicata. Long. 1.75, lat. 0.5 mm.*

<sup>1</sup> Journ. of Conch., vol. ix (1899), p. 186, fig.

<sup>2</sup> Proc. Malac. Soc., vol. iv (1901), p. 210, pl. xxii, fig. 8.



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NEW SPECIES OF GASTROPODA, &c, FROM THE PERSIAN GULF, AND GULF OF OMAN.





The minutest mollusk yet discovered in the Persian Gulf region, but, nevertheless, beautiful in form, being four to five-whorled, scalatograde, longitudinally ribbed, ribs numbering about 12 on the body-whorl, the interstices being smooth. The lip is angled above, nearly straight otherwise, columella slightly excavate. But three or four examples have so far occurred, but so tiny an organism can easily be overlooked.

ODOSTOMIA (PYRGULINA) THELXINOA,<sup>1</sup> n.sp. Pl. VII, Fig. 14.

O. (*Pyrgulina*) testa perminuta, angusta, gradatula, cylindrica, alba, nitida, anfractibus 6-7, quorum duo apicales heterostrophi, vitrei, globulosi, cæteris apud suturas multum impressis, undique longitudinaliter costulatis, costulis fere rectis, delicatis, interstitiis sub lente spiraliter arcte striatis, apertura oblique ovata, labro paullum effuso, continuo, columella uniplicata. Long. 2, lat. .75 mm.

This and the preceding *Pyrgulina* occurred almost equally rarely. Their extremely small size, and, in the case of *P. thelxinoæ*, its neatly turreted or gradate whorls, will serve to distinguish them from their allies.

ODOSTOMIA (MIRALDA) IMA,<sup>2</sup> n.sp. Pl. VII, Fig. 15.

M. testa ovato-fusiformi, compressa, solidula, albida, anfractibus 6, quorum 2 apicales læves, heterostrophi, cæteris apud suturas bene impressis, subcanaliculatis, superne apud medium anfractuum costatis, trinis gemmularum ordinibus decoratis, costulis infra evanidis, sed, penultimo et antepenultimo anfractibus una, ultimo multis ad basim liris fortibus spiraliter accinctis, interstitiis suleulosis, apertura ovata, labro extus crasso, paullum effuso, columella uniplicata. Long. 2.5, lat. 1.

A charming little species, nearly allied to *M. diadema*, A. Ad., from Japan, and which has been also reported from Indian seas. It is more compact, and stouter proportionately than either this or the allied *M. gemma*, A. Ad., the disposition of gemmuled riblets on the upper portion of the whorls, and spiral liræ on the lower, being identical. I would also take this opportunity of stating that two allied species from the Persian Gulf, described in 1903 by Mr. Standen and myself as *Actæopyramis latitia* and *brevicula*,<sup>3</sup> would be better located in the genus *Miralda*.

COLUMBELLA (SEMINELLA) COMISTEA,<sup>4</sup> n.sp. Pl. VII, Fig. 16.

C. testa minuta, obesa, utrinque attenuata, solida, lævi, pallide straminea, anfractibus 6, quorum 3 apicales vitrei, læves, cæteris undique longitudinaliter costulatis, aliter lævissimis, ultimo pyriformi, ad basim maxime attenuato, et spiraliter lirato-suleato, costulis dorsaliter inferne evanidis, apertura angustissima, labro incrassato, nitido, arcuato, columella sinuata, ad basim attenuata, producta. Long. 3, lat. 1 mm., sp. maj.

<sup>1</sup> *θελξινοος*, 'charming.'

<sup>2</sup> *Imus*, in sense of 'abyssal.'

<sup>3</sup> Ann. & Mag. Nat. Hist., vol. xii (1903), p. 305, pl. xxii, figs. 3, 4.

<sup>4</sup> *κομιστέος*, 'brought forward.'

Many examples were obtained of this small *Columbella*, of the same alliance as *C. selasphora*, *phaula*, M. & S., *atoruella*, Duclou, etc., but differing in greater smoothness, even minuter size, pyriform shape, much attenuated at either extremity, and exceedingly narrow orifice. It is perhaps nearest to *C. troglodytes*, Souv., but that species is slightly larger, say long. 4, and not quite so narrowed at either extremity.

*NASSA* (*ALECTRYON*) *JACTABUNDA*,<sup>1</sup> n.sp. Pl. VII, Fig. 17.

N testa obeso-pyramidalis, paullum inflata, pallide straminea, versus apicem rapide attenuata, anfractibus 9, quorum 2 apicales læves, tertio sub lente lævi, uniearinato, cæteris ad suturas paullum gradatis, arete longitudinaliter costulatis, costis interdum irregularibus, numero costarum ultimum ad anfractum circa 19, spiraliter undique arcissime liratis, lirarum ordinibus duobus superne, infra suturas, magnis, tumidis, ad costas gemmulatis, interdum hic illic paucimaeculatis, maculis brunneo-cinereis, apertura ovata, alba, labro effuso, albo, erassiusculo, nitido, intus perindistincte denticulato, columella nitida, alba, excavata, ad basim truncatula, canali brevi. Long. 18, lat. 10 mm.

*Hab.*—Persian Gulf.

To *N. idyllia*, M. & S.,<sup>2</sup> from the Gulf of Oman, this bears a certain resemblance, but is more than half as large again, and a less delicately sculptured species, with spire more acute and lip less thickened. I am indebted to Mr. G. B. Sowerby, not only for the specimens, but for his critical opinion on its merits as a species.

*MARGINELLA* (*VOLVARIA*) *AMYDROZONA*,<sup>3</sup> n.sp. Pl. VIII, Fig. 18.

M. testa cylindrica, attenuata, nitidissima, polita, subdiaphana, pallide stramineo-fusca, vel, rarius, albo-viridescente, spira omnino callose immersa, ultimo anfractu supra medium indistinctissime spiraliter unizonato, zona castanea, apertura angusta, intus straminea, labro fere recto, ad medium inflexo, columella triplicata. Long. 8, lat. 2.5 mm.

*Hab.*—Persian Gulf, Gulf of Oman, Maskat, 15 fathoms (1901–2).

A narrow, cylindrical, bulloid species of *Volvaria*, shining, pale, either straw-coloured, fulvous, or, more rarely, greenish white. The outer lip and columella are callously reflected to such a degree over the spire that total immersion is the result, otherwise the lip is straight, somewhat inflected over the aperture towards the centre, receding again when nearing the base, the columella being white, shining, thrice plaited. There is a very obscure rufous or chestnut zone slightly above the centre of the body-whorl, extending spirally around it.

*MARGINELLA* (*VOLVARIA*) *EUMORPHA*,<sup>4</sup> n.sp. Pl. VIII, Fig. 19.

M. testa nitidissima, lævigata, polita, oblongo-cylindrica, albida vel pallide stramineo-brunnea, subpellucida anfractibus 5, quorum apicales

<sup>1</sup> *Jactabundus*, 'storm-tossed,' from the wave-like costa.

<sup>2</sup> Proc. Zool. Soc., 1901, vol. ii, pp. 410, 411, pl. xxiii, fig. 12.

<sup>3</sup> ἀμυδρός, ζώνη, from the indistinct central band.

<sup>4</sup> εὐμορφος, 'beautifully formed.'

conici, apice ipso magno, omnino lævissimis, ultimo spiraleriter obscure trizonato, zonis rufulis, apertura oblonga, labro incrassato, nitido, simplice, columella obliqua, 4-plicata. Long. 9, lat. 4 mm.

*Hab.*—Persian Gulf, Gulf of Oman, Maskat, 15 fathoms (1902).

Allied to *M. (Volvaria) secalina*, Phil., a Mediterranean species, of which *M. nitida*, Hinds, wrongly included in the subgenus *Cryptospira*, Hinds, by Tryon (Man. Conch., vol. v, p. 34), is perhaps a variety. *M. arena*, Valenc., from the Antilles; *teniata*, Sowb., from the Cape de Verd Islands; and *Verdensis*, E. A. Sm., are likewise near allies; indeed, Mr. Standen and I included this species under the latter name in our general catalogue of Persian Gulf species, and it must now be eliminated, and the name *eumorpha* substituted. *M. gracilis*, C. B. Ad., another West Indian shell, is akin, but our species is not so attenuate.

I am much indebted to Mr. G. B. Sowerby for first having called my attention to these two *Volvaria*, and especially for his having carefully compared them with existing types and specimens in our national collection.

? DRILLIA THISBE, n.sp. Pl. VIII, Fig. 20.

*D. testa parva, fusiformi, alba, solida, anfractibus 6, quorum 3 apicales vitrei, perlæves, cæteris undique spiraleriter densiliratis, liris crassis, interstitiis sub lente obscure longitudinaliter striatulis, apertura ovato-oblonga, labro paullum effuso, columella fere recta, simplice. Long. 6, lat. 1.75 mm.*

Only a few examples occurred of this white, fusiform little species, very likely not full-grown. The close spiral liræ conspicuously covering the whole surface, and the absence of sutural impression, are the chief characteristics. It resembles no other Persian Gulf or Arabian Sea species, excepting, perhaps, *D. circumvertens*, M. & St., and in a lesser degree *D. audax*, from the same locality. It has been suggested that it may be the juvenile form of a Buccinoid species, but I am inclined to hold to its being a member of the Pleurotomidæ.

MANGILIA BIPPLICATA, n.sp. Pl. VIII, Fig. 21.

*M. testa parva, alba vel albo-straminea, ovato-fusiformi, solidula, anfractibus 7-8, quorum 2-3 apicales lævissimi, straminei, nitidi, vitrei, cæteris ad medium angulatis, et carina inferiore infra medium. juxta suturas, undique longitudinaliter crassicostatis, costis ultimi anfractus numero ad 9, spiraleriter liratis, liris paucis, crassiusculis, ultimo ad basim multilirato, apertura ovata, sinu perlato, labro paullum incrassato, intus tridenticulato, columella conspicue biplicata, canali paullum producto. Long. 7, lat. 2 mm., sp. maj.; long. 4, lat. 1 mm., sp. min.*

Varying much in size, as is seen by the dimensions given above, this small *Mangilia* belongs to the same alliance as *spurca*, Hinds, *saror*, Smith, inhabiting the same seas. Such as these, however, are giants compared with even the largest example of this pigmy form.

DAPHNELLA SABRINA, n.sp. Pl. VIII, Fig. 22.

*D. testa ovato-fusiformi, delicata, alba, pulcherrime cancellata, anfractibus 8, quorum 3-4 apicales ochracei, arcte et minutissime decussati, cæteris apud suturas impressis, antepenultimo spiraleriter*

bi-, penultimo tri-, ultimo anfractu quinque-carinato, undique longitudinaliter arcissime et oblique liratis, interstitiis quadratis, lævibus, apertura lata, ovata, canali paullum producto, labro tenui, effuso, columella fere recta, sinu lato, haud profundo. Long. 5, lat. 3 mm., sp. maj.

A peculiarly select and highly sculptured *Daphnella*, unlike any other form hitherto recorded from these seas. Some similitude with *D. (Taranis) Mörcchi*, Malm,<sup>1</sup> from Northern European seas and Gulf of Mexico, may be traced. Nearly all the specimens are imperfect, and greater size is probably ultimately attained than is afforded in the present material.

DAPHNELLA (PLEUROTOMELLA) ALCESTIS, n.sp. Pl. VIII, Fig. 23.

*D. testa* ovato-fusiformi, delicatissima, parva, alba, vel pallide straminea, anfractibus 6-7, quorum apicales 3-4 pulcherrime decussato-cancellati, ochracei, cæteris ad suturas bene impressis, ventricosi, undique longitudinaliter crassicostatis, costis obliquis, spiraliter tenuiliratis, liris paucis, ad juncturas costarum gemmuliferis, ultimo anfractu apud basim producto, apertura fusoid, oblonga, labro tenui, canali lato. Long. 6, lat. 1.5 mm.

A delicate fusoid *Daphnella*, not perhaps quite adult, but the six or eight examples that occurred were all much of the same size. It seems almost exactly intermediate, as regards texture, between *D. Lucasii* and *Clathurella amphiblestrum*, Melv., from the same locality, being in form like the former, from which it chiefly differs in the presence of longitudinal ribs and different quality of spiral sculpture, from the latter in general form, and, especially, more extended canal. It is more than probable that *Cl. amphiblestrum*, as well as *Mangilia ephora*, Melv., should be classed among the *Daphnellæ* as of the subgenus *Pleurotomella*. Verrill. The eight allied species as yet differentiated from the Persian Gulf region might be placed thus:—

*Pleurotomella itama*, n.sp.

*Pl. Lucasii*, Melv.: Proc. Malac. Soc., vol. vi, p. 167, pl. x, fig. 25 (1904).

*Pl. Alcestis*, n.sp.

*Pl. amphiblestrum*, Melv. (*Clathurella*): Proc. Malac. Soc., vol. vi, p. 58, pl. v, fig. 7 (1904).

*Pl. Nereidum*, M. & St.: Ann. & Mag. Nat. Hist., vol. xii, p. 315, pl. xxiii, fig. 2 (1903).

*Pl. Amphitrites*, M. & St.: l.c., p. 316, pl. xxiii, fig. 3 (1903).

*Pl. Eulimenes*, Melv.: Journ. of Malac., vol. xi, p. 84, pl. viii, fig. 15 (1904).

*Pl. ephora*, Melv. (*Mangilia*): Proc. Malac. Soc., vol. vi, p. 58, pl. v, fig. 5 (1904).

DAPHNELLA (PLEUROTOMELLA) ITAMA,<sup>2</sup> n.sp. Pl. VIII, Fig. 24.

*D. testa* parva, fusiformi, pallide straminea vel brunnea, asperata, anfractibus 7-8, quorum 3-4 apicales ochracei, ventricosi, pulcherrime

<sup>1</sup> Cf. Sars, Moll. Norveg., pl. xvii, fig. 8.

<sup>2</sup> *itapós*, 'bold.'